

PH85-F1P1S2

850nm High power VCSEL TO-46 Can Package

Features

- : **10mW** High power VCSEL
- : 1Gbps data rates
- : 850nm wavelength range
- : Back monitor Photo diode
- : Flat window Type TO-46 Can Package
- : Other configurations available on request

Applications

- : High speed Data Communications
- : Gigabit Ethernet
- : Fiber Channel
- : Free Space Optics
- : Sensor

Description



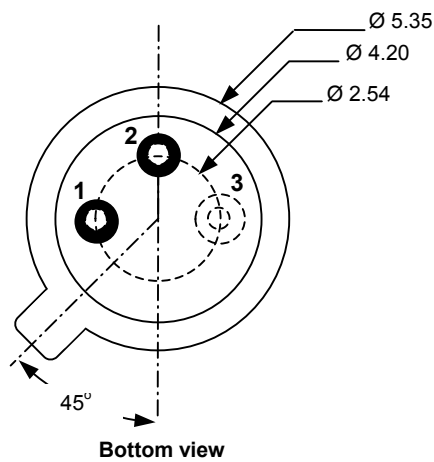
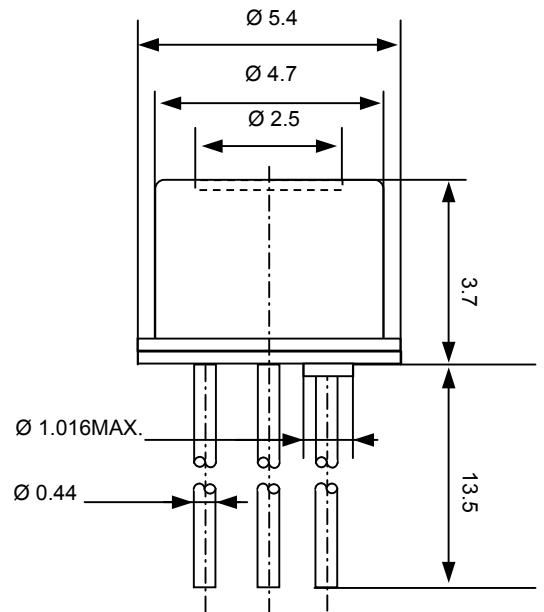
Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 100 °C
Operating Temperature	0 to 70 °C
Lead Solder Temperature	260 °C, 10 sec
Continuous Forward Current	30mA
Continuous Reverse Voltage	5V (@10μA)

PH85-F1P1S2

850nm High power VCSEL TO-46 Can Package

Dimensions



PINOUT

Number	Function
1	A _{LD}
2	K _{LD,APD}
3	K _{PD}

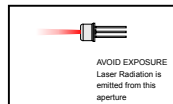
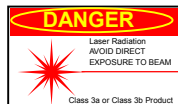
Unit:mm

Electro-Optics Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise stated)

Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Optical Output Power	P_o		8		mW	$I_f = 20 \text{ mA}$
Threshold Current	I_{th}		5		mA	CW
I_{th} Temperature Variation	ΔI_{th}		2.5		mA	$T_a=0$ to 70°C
Slope Efficiency	η	0.2	0.4		W/A	$I_f = 20 \text{ mA}$
η Temperature Variation	$\Delta \eta / \Delta T$		-0.5		%/ $^{\circ}\text{C}$	$T_a=0$ to 70°C at 20 mA
Peak Wavelength	λ_p	840	850	860	nm	$I_f = 20 \text{ mA}$
λ_p Temperature Coefficient	$\Delta \lambda / \Delta T$		0.06		nm/ $^{\circ}\text{C}$	$T_a=0$ to 70°C at 20mA
Spectral Bandwidth	$\Delta \lambda$			0.85	nm	$I_f = 20 \text{ mA}$, (RMS)
Beam Divergence	Θ		29		$^{\circ}$	$I_f = 20 \text{ mA}$, (Full Width, $1/e^2$)
Forward Voltage	V_f		2.0	2.3	V	$I_f = 20 \text{ mA}$
Breakdown Voltage	V_b		-10		V	
Series Resistance	R_s		20	30	Ohm	$I_f = 20 \text{ mA}$
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Monitor Current	I_{PD}	0.1		1	mA	$P_o = 8 \text{ mW}$
I_{PD} Temperature Variation	$\Delta I_{PD} / \Delta T$		0.2		%/ $^{\circ}\text{C}$	$P_o = 8 \text{ mW}$
Dark current	I_D			20	nA	$P_o=0 \text{ mW}, V_R=3 \text{ V}$
PD Reverse Voltage	BVR_{PD}	30	115		V	$P_o=0 \text{ mW}, I_R=10 \mu\text{A}$
PD Capacitance	C			100	pF	$V_R=0 \text{ V}, \text{Freq}=1 \text{ MHz}$
				55	pF	$V_R=3 \text{ V}, \text{Freq}=1 \text{ MHz}$

Notes

* These specifications are subject to change without notice



NOTICE

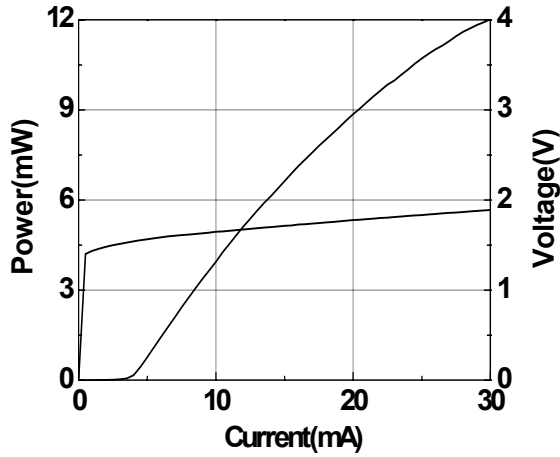
The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product

DANGER

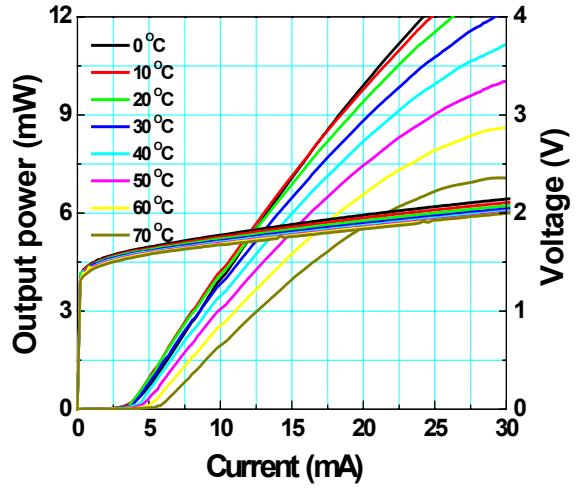
The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

Characteristics Curves

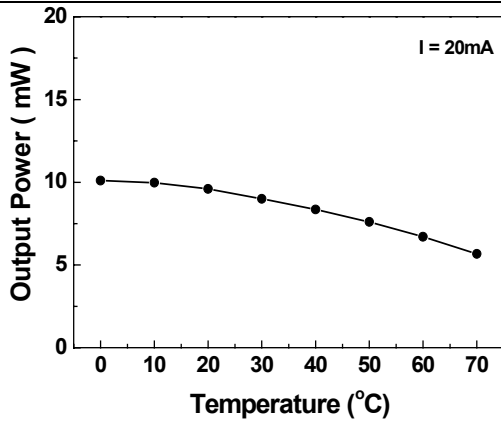
LIV Curve



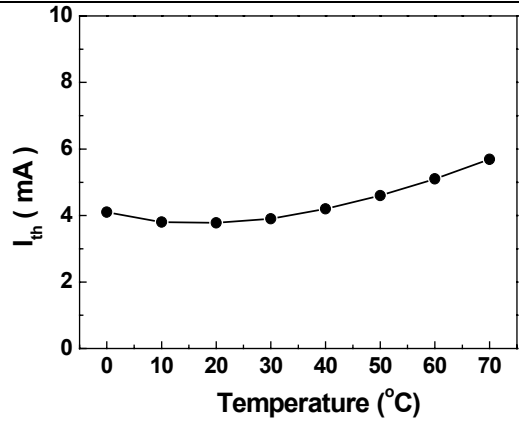
LIV vs Temperature



P_o vs Temperature



I_{th} vs Temperature



FFP

